

ATRIPLEX FRANKENIOIDES (CHENOPODIACEAE),
A NEW SPECIES FROM BAJA CALIFORNIA, MEXICO

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Atriplex frankenioides Moran, species nova.

Herba dioica perennis ramosa furfuracea 1-3 dm alta vel prostrata. Caulis basin versus 1 1/2-4 mm crassus, ramis gracilibus diam. 1/2-1 mm, aliquibus decumbentibus ad 5 dm. Folia opposita sessilia lanceolata ad elliptica 2-5 mm longa 1-2 1/2 mm lata. Flores staminati 4-meri, in 1-4 glomerulis terminalibus et subterminalibus 2-3 1/2 mm latis. Flores pistillati in axillis foliorum solitarii, bracteis fertilibus sessilibus complanatis rhombo-ovatis integris 3-4 mm longis 2-3 mm latis apice ca. 1 mm libris infra connatis. Semina lenticularia brunnea 1.2-1.5 mm longa 0.55-0.7 mm crassa, radícula superiore. Typus: Moran 21184 (SD 86932). Atriplici watsoniae affinis sed ob folia multo parviora habitaque saepe erectiorem aspectu valde dissimilis, in illa foliis 8-20 (-35) mm longis 4-10 (-15) mm latis, bracteis fertilibus 4-8 mm longis.

Much-branched gray scurfy dioecious perennial 1-3 dm tall, weakly erect with decumbent branches to 5 dm long, or prostrate and forming mats. Stem 1 1/2-4 mm thick and slightly woody at base, the branches 1/2-1 mm thick, densely scurfy but in age bare and gray-brown with peeling bark, leafy for 5-15 cm, often with axillary fascicles; internodes 5-15 (-25) mm long. Leaves opposite and subconnate, rarely alternate, sessile, lanceolate or narrowly ovate to elliptic, entire, narrowly rounded at apex, densely and persistently scurfy on both sides, 2-5 mm long, 1-1 1/2 (-2 1/2) mm wide, rather thick, channeled ventrally. Staminate inflorescence a terminal glomerule 2-3 1/2 mm wide, with the leaf pair often reduced, or a terminal series of 2-4 well separated glomerules, the lower commonly with unreduced leaves; flowers 4-merous, often purplish red in age; sepals ovate, rounded and somewhat erose above, cucullate, ca. 1 mm long, united 1/3 or mostly less, scurfy without, glabrous within; filaments ca. 1 mm long, the anther ca. 1/2 mm long; pistil vestigial. Pistillate flowers solitary in leaf axils; fruiting bracts purplish red at first, sessile, compressed, rhombic-ovate to triangular-ovate, entire, 3-4 mm long, 2-3 mm wide, united except for a triangular tip ca. 1 mm long, bony in area around seed cavity, softer elsewhere, the rather strong midvein and weaker reticulations largely obscured by persistent scurf; perianth none; style 0.3-1.5 mm long, ca. 0.3 mm wide, the stigmas to 2 mm long. Seed lenticular, shiny dark reddish brown, 1.2-1.5 mm long, 1.1-1.25 mm wide, 0.55-0.7 mm thick; radicle superior.



Dried specimens of Atriplex frankenioides, of the type collection (Moran 21184): pistillate above, staminate below. X 1.0.

Type collection.—Fairly common in upper level of salt marsh, with Allenrolfea occidentalis (S. Wats.) Kuntze, Batis maritima L., Cressa truxillensis HBK., and Monanthochloe littoralis Engelm., near Rocky Point, east shore of Laguna de San Ignacio, Territorio Sur de Baja California, México (near 26°47.2'N, 113°14.7'W), 26 March 1974, Moran 21184—holotype: SD 86932; isotypes to go.

Other collection.—"Prostrate mat-forming perennial, with ends of stems purple tinged"; in high marsh with Monanthochloe littoralis Engelm. and Salicornia subterminalis Parish, Estero de la Laguna, south of La Laguna, P. Mudie 805 (SD).

The new species is named from its resemblance to Frankenia palmeri S. Wats., a shrubbier plant abundant in maritime habitats of Baja California.

Atriplex frankenioides appears to be rather local. At least Peta Mudie, in a survey of salt-marsh plants of Baja California, found it (she tells me) only at Estero de la Laguna—apparently 3 or 4 miles easterly of the type locality. Johnson (1973) failed to find it in other maritime habitats.

In the treatment of Hall and Clements (1923) the new species would become the third in the distinctive (unnamed) group of dioecious herbs, which is further marked by opposite leaves. It seems closest to A. watsonii A. Nels. (A. decumbens S. Wats.), with which it agrees further in general shape of leaves and of fruiting bracts. However, A. watsonii has quite a different aspect because of its much larger leaves—which are 8-20 (-35) mm long and 4-10 (-15) mm wide according to Hall and Clements, though in fact occasionally slightly smaller. Also, the branches of A. watsonii are somewhat thicker; the leaves tend to be somewhat wider for their length; the staminate inflorescence is usually less leafy, occasionally more crowded and spikelike, and often longer, with more glomerules; the pistillate flowers are clustered in the leaf axils; and the fruiting bracts are larger (4-8 mm long) and often denticulate. Plants at the type locality of A. frankenioides differ from A. watsonii further in being weakly erect; but Mrs. Mudie's collection is described as prostrate and mat-forming. Typical A. watsonii occurs along the coast, sometimes near the upper limits of salt marshes but often higher, from Santa Barbara County, California, to northern Baja California. Hall and Clements reported it only as far south as San Quintín (near 30°30'N); and Shreve and Wiggins (1964), whose northern limit is just south of San Quintín, omitted it.

Apparently to be referred to A. watsonii, however, is a specimen (Mudie & Johnson 1038, SD) from Arroyo San Juan, at 26°23'N, about 40 miles southeast of the type locality of A. frankenioides. Leaves are 8-15 mm long and 3-5 mm wide and thus rather narrow for

the species; fruits are clustered, the bracts 4-5 mm long and thus near the lower size limit. Thus, though closer to A. watsonii, this specimen in both these respects somewhat approaches A. frankenioides.

Two staminate plants of this relationship (Mudie & Johnson 842a, 842b, SD) from Boca de Animas, near 25°42'N, show that all is not simple and clearcut. (Pistillate material is lacking.) No. 842a has prostrate stems with internodes to 4 cm long; the opposite or subopposite leaves are linear-lanceolate, acute, to 18 mm long and 3 mm wide; and the inflorescence is more spikelike than sharply glomerulate. The leaves are much narrower than in typical A. watsonii; but considered with the rather-narrow-leaved 1038, from Arroyo San Juan, this specimen might perhaps be taken for an extreme of that species. No. 842b is prostrate and matting, with short internodes, with opposite leaves about 4-8 mm long and 1-1 1/2 mm wide, and with an inflorescence of a single glomerule. Thus this plant approaches A. frankenioides in leaves and staminate inflorescence and is perhaps to be referred to that species. The question is whether these two dissimilar plants from Las Animas represent two populations or one.

References

- Hall, Harvey M., and Frederic E. Clements. 1923. The phylogenetic method in taxonomy: Genus Atriplex. Carnegie Inst. Wash. Publ. 326: 235-346, figs. 29-47, pls. 36-58.
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- Shreve, Forrest, and Ira L. Wiggins. 1964. Vegetation and flora of the Sonoran Desert. i-xi, 1-1740, maps 1-27, pls. 1-37. Stanford University Press.